CLAIMS:

1. A method of analyzing a contour image (100), comprising:

- specifying a scan path (306) of positions (xR, yR) in the contour image (100), each position corresponding to a region of interest (303);

- constructing a first table (111) containing for each pixel in the contour image (100) of non-zero value at least one position coordinate (x);

- constructing a fourth table (311) with entries corresponding to the position of the region of interest (303), containing at least for each parallel line of pixels, the line having a predetermined orientation and traversing the region of interest (303), an index (312) of an entry (121) in the first table (111), of, given a scan direction, the first non zero pixel of the contour image (100) lying on that parallel line and being inside the region of interest (303); and

- constructing a fifth table (313) with entries corresponding to the position of the region of interest (303), containing at least for each parallel line of pixels, the line having a predetermined orientation and traversing the region of interest (303), an index (312) of an entry (121) in the first table (111), of, given a scan direction, the last non zero pixel of the contour image (100) lying on that parallel line and being inside the region of interest (303).

2. A method of analyzing a contour image (100) as claimed in claim 1, comprising:

- specifying the scan path (306) as consecutive positions (xR, yR) running downwards along a column and subsequently jumping towards the next column;

- constructing the first table (111) containing for each pixel in the contour image (100) of non-zero value at least one position coordinate (x);

- constructing the fourth table (311) containing at least for each horizontal line of pixels traversing the region of interest (303), an index (312) of an entry (121) in the first table (111), of the leftmost non zero pixel of the contour image (100) lying on the respective horizontal line and being inside the region of interest (303); and

- constructing the fifth table (311) containing at least for each horizontal line of pixels traversing the region of interest (303), an index (314) of an entry (121) in the first table

(111), of the rightmost non zero pixel of the contour image (100) lying on the respective horizontal line and being inside the region of interest (303).

3. A method of analyzing a contour image (100) as claimed in claim 2, comprising:

- constructing a second table (113) containing for substantially each horizontal line of the contour image (100) an index (123) of an entry (121) in the first table (111), of the leftmost non zero pixel on the respective horizontal line of the contour image (100);
- constructing a third table (115) containing for substantially each horizontal line of the contour image (100) an index (125) of an entry (121) in the first table (111), of the rightmost non zero pixel on the respective horizontal line of the contour image (100); and
- constructing the fourth table (311) and the fifth table (311) on the basis of the first table (111), the second table (113) and the third table (115).

4. Method of detecting an object in a contour image (100) as claimed in one of the claims 1, 2, and 3, further comprising:

- calculating for consecutive positions along the scan path (306) a count (320) of a number of non zero pixels inside the region of interest (303), on the basis of the fourth table (311) and the fifth table (313);
- evaluating a match function for obtaining an indication of a match between a template contour and the pixels of the contour image (100) present in the region of interest (303), taking as arguments pixels in the region of interest (303) and pixels in a template contour window (200) if the count (320) is greater than or equal to a predetermined pixel amount;
- performing a jump to a further position along the scan path (306) if the count (320) is smaller than a predetermined pixel amount.

5. A method of detecting an object in a contour image (100) as claimed in claim 4, for which the template contour to be verified is a geometrical transformation of a template contour in the template contour window (200), comprising:

- fetching for a pixel of the template contour window (200) a corresponding pixel in the contour image, at a position (x', y') which is determined by the position (x,y) of the pixel of the template contour window (200) and the geometrical transformation; and

- evaluating the match function on the basis of the similarity between the pixel of the template contour window (200) and the corresponding pixel.

6. A method of detecting an object in an image as claimed in one of the claims 1, 2, 3, 4 and 5, further comprising:

- applying a contour detection to the image to obtain the contour image (100).

7. An image processing device (731) for analyzing a contour image (100), comprising:

- a first unit (721) arranged to specify a position (xR, yR) on a scan path (306) in the contour image (100) of a region of interest (303); and
- a second unit (723) arranged to construct and store in a memory (715):

a) a first table (111) containing for each pixel in the contour image (100) of non-zero value at least one position coordinate (x),

b) a fourth table (311) containing at least for each parallel line of pixels traversing the region of interest (303), an index (312) of an entry (121) in the first table (111), of, given a scan direction, the first non zero pixel of the contour image (100) lying on the respective parallel line and being inside the region of interest (303), and

c) a fifth table (313) containing at least for each parallel line of pixels traversing the region of interest (303), an index (314) of an entry (121) in the first table (111), of, given a scan direction, the last non zero pixel of the contour image (100) lying on the respective parallel line and being inside the region of interest (303).

8. An image processing device (732) for detecting an object in the contour image (100) comprising an image processing device (731) as claimed in claim 7, and further comprising:

- a matching unit (727) arranged to evaluate a match function taking as arguments pixels in a region of interest (303) and pixels in a template contour window (200); and
- a decision unit (725), arranged to calculate a count (320) of a number of non zero pixels inside the region of interest (303), on the basis of the fourth table (311) and the fifth table (313), arranged to instruct the first unit (721) to jump to a further position along the scan path (306) if the count (320) is smaller than a predetermined pixel amount, and arranged to instruct the matching unit (727) to evaluate the match function for the current

region of interest (303) if the count (320) is greater than or equal to the predetermined pixel amount.

9. An industrial vision apparatus (700), comprising an image processing device (731) as claimed in claim 7 or an image processing device (732) as claimed in claim 8, and further comprising:

- a contour generation unit (711) arranged to generate the contour image (100) from an image receivable from a camera (701); and
- a control unit (150), arranged to output a signal (S) in dependence on a result of the match function.

10. A smart camera, comprising an image processing device (731) as claimed in claim 7 or an image processing device (732) as claimed in claim 8, and further comprising:

- a contour generation unit arranged to generate the contour image (100) from an image captured by the camera (701); and
- an image treatment unit, arranged to apply an image transformation to a region of the image captured by the camera, determined on the basis of an object detected by the image processing device (731).

11. An image display, comprising an image processing device (731) as claimed in claim 7 or an image processing device (732) as claimed in claim 8, and further comprising:

- a contour generation unit arranged to generate the contour image (100) from an image received by the image display; and
- an image treatment unit, arranged to apply an image transformation to a region of the received image, determined on the basis of an object detected by the image processing device (731).

12. A security system comprising an industrial vision apparatus (700) as claimed in claim 9.

13. A computer program product, comprising program code to enable a processor to execute one of the methods 1 to 6.